

## **Chapter 3**

### **Research Methodology**

#### **3.1 Introduction**

The previous chapter detailed the literature and research on the CLIL approach. This chapter focuses on the CLIL intervention conducted for the present research. It details the research design, research questions, sample size, hypothesis, assumptions, and methodology applied to advance the research and achieve the most suitable outcome for the research questions.

#### **3.2 Design of Study**

The present study follows a quasi-experimental research design in which the participants' experience is not unilateral, and there is no control group. The research also employs the pre-test and post-test models. The data for the research was collected using the mixed method design, in which both qualitative and quantitative data were collected, and their results were integrated to collect data for the research questions. The use of both Qualitative and Quantitative data in research is helpful, as suggested by Creswell & Clark (2011), for the comparative results of both sets of data help in better research analysis.

#### **3.3 Research Questions**

As mentioned in Chapter 1, this study investigated the following research questions:

1. What were the responses of the learners towards the CLIL approach?
2. What were the responses of the trainers towards the CLIL approach?
3. Does an integrated content and language approach help in building learners' confidence?

#### **3.4 Hypothesis**

As mentioned in Chapter 1, the following was the hypothesis for this study:

CLIL is a practical and welcoming approach to help learners develop their language and content knowledge.

The study is quasi-experimental intervention research based on fieldwork. It is dual in nature as it is both exploratory and experimental, with a mixed-method research design and the central focus on the research questions.

The present research has a single central hypothesis guiding the study's outcome.

### 3.5 Defining the Variables

In this section, the researcher describes the study's variables with the aid of the research questions.

#### 1. What were the responses of the learners towards the CLIL approach?

In this question, the role of the CLIL materials and activities used during the intervention is central to the discussion. Thus, the CLIL materials and activities become the independent variable, and the learners' reactions become the dependent variables.

#### 2. Does an integrated content and language approach help in building learners' confidence?

In this question, lesson planning and the role of the CLIL materials and activities used during the intervention are also centrally focused. Thus, lesson planning and CLIL materials and activities become the independent variables and confidence building among the learners becomes the dependent variable.

#### 3. What were the responses of the trainers towards the CLIL approach?

In this question, the central focus is on lesson planning and the role of the CLIL materials and activities used during the intervention. Thus, lesson planning and CLIL materials and activities become the independent variables, and the trainers' reactions are the dependent variables.

Thus, each variable drawn from the three research questions was analysed, and the following variables were found to be associated with this study.

The Independent Variables: Lesson Planning and CLIL materials and activities.

The Dependent Variables: Responses of the learners, the trainers' responses, and the learners' confidence.

### 3.6 Sample Size

The study's sample size included 150 learners pursuing vocational and skill education training and 11 trainers who work in these vocational and skill institutions.

### 3.7 Defining the Sample

This study's first set of samples consisted of learners from the states of Assam, Meghalaya, and Nagaland. The sample size from the state of Meghalaya was 20, and from the state of Nagaland was 20. The remaining samples were from the state of Assam. These samples were pursuing their vocational education training at Guwahati, in the state of Assam. The study sample was 16 to 22 years of age. They came from similar family backgrounds where a job was a priority and contributing to the family income was

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essential. The educational qualifications of the samples came under two categories - Class X graduates constituting the maximum and Class XII graduates constituting 40% of the list. However, concerning the vocational and skill classes, the majority of learners were at the same level, as the course and content were new to all, and the exposure to the English language was very limited to each learner. The English language use and exposure were limited to the classroom, and there were few activities such as music, movies, and social media use.

Each institution's first set of samples were keen learners, which helped achieve the study's outcome.

The second sample set for this study constituted of 11 trainers who taught in vocational and skill institutes. Out of the 11 trainers sampled, 5 were pure English language trainers, 2 were working as content and language trainers, and the remaining 4 were pure content trainers. Each trainer's experience in the vocational and skill sector was more than a year. A few trainers had over six years of experience in their content area.

The institutions in which the research study was conducted were vocational and skill institutions conducting government-sponsored Vocational and Skill Development Programmes. The list of the institutions are as under:

- 1) Skill Center at Assam Down Town University
- 2) Kamrup College of Vocational Training
- 3) Pragati Edutech
- 4) Skill Center at Don Bosco Institute
- 5) Jettwings Institute of Aviation and Hospitality
- 6) North East Skill Centre

The second sample in each institution consisted of keen trainer-observers who helped achieve the study's outcome.

### **3.8 Research Tools**

The following tools were applied during the research to reach the goals of the study:

- Questionnaires
- Checklist
- Semi-structured interviews

Questionnaires were a part of all the study's major stages, from the pilot study stage to the pre-intervention stage and finally to the post-intervention stage.

The checklist played a significant role in the Intervention stage of the study. Furthermore, in line with the questionnaires, the semi-structured interviews were held after the pilot study, pre- and post-intervention stages. All the above three research tools enabled better assessment and comprehensive evaluation for the study.

### **3.9 Methodology**

This study attempted to introduce the Content and Language Integrated Learning (CLIL) approach to vocational and skill education learners.

"Learners develop competence in the CLIL language so that they are able to carry out significant task-based functions which might range from customer service through to accessing and processing information in different languages. Where applicable, this is carried out by content and language teachers working in tandem. It marks a shift away from existing practice such as teaching language for specific purposes towards practice which seeks to achieve the same objective through a closer tie to content teaching and learning" (Coyle et al., 2010, p. 22).

The research was an intervention study with four major stages: a pilot study, a pre-intervention stage, an intervention stage, and a post-intervention stage. The following sections elaborately describe and discuss each stage.

#### **3.10 Pilot Study**

The first stage of the methodology adopted by the researcher is a pilot study. A pilot study, as an investigation, forms the initial groundwork for the research. Using a pilot study, the researcher investigated the feasibility and approachability of the CLIL classes and materials. The first part of the pilot study started with building CLIL materials which was followed by the intervention in which students were taught using the CLIL materials developed. The final part included data collection, which was done in two stages. First, data was collected during the intervention with the help of classroom observation, and subsequently, after the intervention, questionnaires and informal interviews helped collect data. The feedback from the students about the materials and the teaching method played an essential role in the pilot study after the intervention. The data and feedback gathered from students were critical in assisting the researcher in carrying out the final interventions for the research project. The following parts go over the pilot study in depth.

##### **3.10.1 Devising CLIL Materials for Pilot Study**

The researcher discussed the areas of concern with her learners in both content and language with the content trainer. Two content topics and two language areas were picked for the pilot study.

Coyle's (1999) 4Cs curriculum was followed to devise the materials. The materials carefully tried to integrate content, communication, and culture into the lessons and the activities. Four lesson plans of two hours each were prepared and used. The researcher consulted the lessons and checklist designed by Bentley (2010) and Dale & Tanner (2012) to present the CLIL materials during the pilot study intervention.

The secretarial practice lessons covered in the pilot study intervention were "Management", "Importance of Management", "Record Management", and "Importance of Record Management". The language functions covered were describing, asking questions, comparing and expressing. Vocabulary related to the content and language area was also a part of the lesson. The grammar portion included prepositions, verbs and adjectives. The materials also focused on the four language skills to help the students better understand the lessons' use.

The activities included a balance between group work and individual-based activities. Each activity integrated language and content, along with the use of higher-order thinking.

### ***3.10.2 Conducting the Pilot Study***

The Pilot Study was conducted with 20 students from the Secretarial Practice course over five days (Monday to Friday). The study was conducted for two hours daily, with a total time of ten hours. A single trainer who was a language matter expert, observed the study.

Each lesson began with content followed by language function. Next, the lesson introduced vocabulary, which was then pronounced. Finally, the grammar element was incorporated into the lesson and reviewed at the end.

The activities were explained to the learners to clarify what was needed to complete the activity and how the activity was to be completed. Scaffolding was provided to the learners when needed, along with ample time and patience. The researcher observed enthusiasm and active participation among the learners during the lessons and the activities.

### ***3.10.3 Format of the Questionnaire***

The pilot study questionnaire consisted of eight close-ended questions and two open-ended questions (the Questionnaire is added in the Appendices section). The Likert scale by Rensis Likert (1932) was used for the close-ended questions, in which the learners got options ranging from "Strongly Agree" to "Strongly Disagree." The open-ended questions

were to get the learners' views and feedback. These two questions were asked to be answered in brief.

#### **3.10.4 *Piloting and Administering the Questionnaire***

The questionnaire was administered to all 20 students who participated in the pilot study with each question being explained to ensure clarity.

The researcher observed that the questionnaire needed a few additions even after being prepared after careful research. The additions are discussed in the Observations section.

#### **3.10.5 *Classroom Observations***

The content trainer's classroom observation was vital to the pilot study. The questionnaire used for the classroom observation was adapted from the checklist prepared by Mehisto et. al., (2008).

The content trainer, who acted as both the content and language teacher for the secretarial practice course, was available for all the classes conducted by the trainer and even helped during the activities. The trainer ensured the completion of the checklist and shared a few positive remarks.

#### **3.10.6 *Interviews***

Using random sampling, the researcher interviewed 9 of the 20 learners who participated in the pilot study. The learners, after initial hesitation towards the interview setup, were gradually more forthcoming in answering questions and sharing their view. The researcher noted the answers.

The researcher also interviewed the trainer to better understand the course, its possibilities, the use of the CLIL approach, and the trainer's perspective.

#### **3.10.7 *Observations***

The pilot study helped the researcher with a few crucial pointers that were worked upon for the final interventions.

It was observed that the number of questions in the post-intervention questionnaire needed to be increased. This helped better understand the learner's view regarding the CLIL approach, which was the study's primary aim.

Need analysis had to be added, as it was vital to understand the learners' needs concerning content and language. As Hutchinson & Waters (1987) stated, need analysis forms the foundation of any language course.

It was also observed that the intervention time needed to be extended during the final intervention phase. The extended time frame would have allowed learners to better understand the CLIL approach and its utility.

### **3.11 Pre - Intervention Stage**

In this stage, the researcher spent eight months devising and preparing for the intervention stage. First, the researcher visited the vocational and skill institutions to seek permission to conduct the research. Then, the researcher devised CLIL materials and discussed the students' expectations and requirements with the trainers of the various skill development courses.

#### **3.11.1 *Discussion with the trainers***

Individual discussions were held with the trainers for each skill training programme to learn about the skill set required for the job market. The trainers also helped understand the content area and added value to the lesson plans prepared for the intervention.

Shared and collaborative practices by the teachers help build impactful and enriching bridges. The "hybrid teacher", according to Ball et al., (2015), is one "whose expertise is no less specialised but instead specialised in a broader sense. The language teacher can benefit from all three dimensions of content (concepts, procedures, and language), not just one (language). The subject teacher benefits too, by becoming more aware of the language dimension and becoming more adept at making the role of language more salient in the classroom." (p. 272).

#### **3.11.2 *Devising the Pre-test***

The pre-test was divided into two sections. The first section tested the students' language ability, and the second section tested the use of language concerning the student's content knowledge. The first section of the pre-test aimed to test the student's language ability at the word, sentence, and paragraph levels of language teaching and learning. This test was designed based on ASER (2007): Comprehension tasks. (A sample of the question paper is added to the appendices section of the thesis).

In the second section, the learners were given a situation related to their content area. They had to respond to it in about two to three lines. An interesting situation was picked based on their future work environment, and they had to respond. No scaffolding was provided by the trainers and the researcher.

#### **3.11.3 *Piloting the pre-test***

The pre-test was piloted on 20 students across the six institutions participating in the research. In the first section, it was observed that the students performed well. Only a few

things needed to be corrected with the similar choices provided at the sentence and paragraph level.

In the second section, the students had to respond to situations related to their content area. The situation had to be repeated twice for the students to consider their responses as the students expressed hesitation, initially. Finally, the responses were shared, but mostly in single broken sentences. Hence, the researcher picked out more straightforward situations for the final pre-test.

#### ***3.11.4 Conducting the pre-test***

The pre-test was conducted with all 150 participants. The questions for the first section of the pre-test remained the same for all the participants. However, the situation for the second section of the pre-test changed with each skill and vocational group based on their specific content areas, such as aviation, hospitality, retail, office management and BPO (Business Process Outsourcing). The researcher made individual notes for each student while administering the second section of the pre-test.

#### ***3.11.5 Devising CLIL materials for the intervention***

Bentley (2010) mentioned how the CLIL contexts and teaching aims need to be precise while planning CLIL lessons. Moreover, the content knowledge and skills to be taught to the students must be clearly identified.

The materials for the classroom intervention were devised using the DARTs or Directed Activities Related to Texts, as suggested by Davies & Greene (1984), in which a text is seen through the prism of both language and structure. According to the 4Cs curriculum as mentioned by Coyle et al., (2010) and Coyle (2007), a CLIL lesson is not merely a language or a content lesson. A CLIL lesson is a combination of Content (knowledge related to specific elements), Communication (language to learn), Cognition (developing thinking and understanding), and Culture (shared understandings and alternate perspectives).

The intervention with the six groups lasted 18 hours each. It was held for nine days, for two hours each day, and each group covered five topics in the nine days.

Content topics related to the student's skills and vocational areas were chosen for the intervention, taking into account the varied range of students in a class. The suggestions and the checklist designed by Bentley (2010) and Dale & Tanner (2012) were used to ensure the materials were in line with the CLIL lesson standards.



The researcher emphasised the form, meaning and function of the language used in the lesson plan, as Schleppegrell (2004) emphasised how form and meaning cannot be discrete. The lesson plan included 21st-century life and learning skills, which include understanding, application, analysis, evaluation, critical thinking, communication, and creation. According to sociocultural learning theories, language, thinking, and culture are all taught through social contact and are inextricably linked and interconnected. These principles emphasise the need to know a subject's language and its unique culture. CLIL teachers teach students not simply information about a topic but also how to think, write, and communicate like subject specialists (Dale & Tanner, 2012).

According to Coyle et al. (2010), culture is an important aspect of teaching and learning in CLIL. Cultural awareness fosters cultural sensitivity and intercultural understanding among the learners, which further fosters multilingualism, helps them understand the content, and build on their language ability. This notion is similar to the development of language skills, wherein each skill helps develop the other, and none can grow in isolation. For learners to appreciate the content at their disposal, culture and its understanding become the key to the CLIL approach.

A multilingual is aware of the languages and can code mix, code-switch, and language shift, as well as deal with interference, transfer, and language loss with the aid of culture. Hence, vocabulary development with the help of cultural understanding was a significant part of the lessons. Bentley (2010) encouraged the use of vocabulary in the CLIL classroom to help students understand their language.

The activities incorporated in the lessons worked towards enabling students to communicate the 'subject content' verbally, use the skills of listening and reading effectively, and support non-aided speaking. Activities such as cloze tests, gap fills, multiple choice, jigsaw listening, and others were included, mostly in pairs and groups, to aid collaborative learning. All the activities integrated content and language areas. A few samples of the intervention materials- lesson plans and activities are added in the appendices section at the thesis' end.

### **3.11.6 Need Analysis**

As observed in the pilot study, need analysis was vital to understand the learners' needs concerning content and language. Hence, a need analysis was conducted during the pre-intervention stage to help with the inclusion of the student's needs in the intervention stage.

The need analysis was based on the Dudley-Evans & John (1998) model, which focused on crucial elements related to a student, such as their personal information, professional information, learning needs and areas of development, language information, and course needs.

The need analysis questionnaire given to all 150 students consisted of five introductory questions, 22 closed-ended questions and eight open-ended questions (A sample of the questionnaire is added in the appendices section). The question paper was read out, and clear instructions were given to the students for answering the closed-ended and open-ended questions.

The questionnaire was an individual activity, and were given a time slot of 45 minutes to finish answering the questions. The researcher and a trainer were present for the entire duration to invigilate over the process.

### **3.12 Intervention Stage**

In this section, the researcher discusses teaching in the intervention classroom, administering the pre-intervention questionnaire, and conducting classroom observations.

#### **3.12.1 *Conducting the Intervention***

The intervention with the six groups was for 18 hours each. The intervention for each group was held for nine days for a period of 2 hours each day.

Bullock (1975) said that all (subject) teachers teach language. In a similar vein, Mohan (1986) stated that in subject-matter learning, the role of language is missed as a medium of education. In language acquisition, the fact that content is communicated is ignored. However, the integration of content and language is the bedrock of the CLIL approach.

The CLIL lessons began with an introduction to the content and language function needed for the day. This was followed by understanding the thinking skills that would be used. Finally, the lessons moved towards the vocabulary and grammar elements that played a significant part in the lesson. The key elements of the lesson plan involved-content area, teaching aims, learning outcomes, communication, and cognition.

Coyle (2007) mentioned how culture is an essential aspect of CLIL. During the intervention, students were allowed to share their cultural knowledge with the class by describing the content words in their native language and then moving towards English. They were even given examples from other cultures during the lessons about their content area and the situations they would face in their future work environment. Mehisto (2012) emphasised culture while outlining the prerequisites for creating 'excellent CLIL materials'. Using authentic, culturally relevant materials can help learners broaden their

knowledge, explore diverse themes, and promote multilingualism. Coyle et al., (2010) propose that culture is important to CLIL teaching and learning.

The intervention worked towards increased student talk time and decreased teacher talk time. Self-evaluation, peer evaluation and feedback were essential elements of the class. Mehisto et al., (2008) mentioned how brainstorming over the new content topic was welcomed for each new topic, where students were encouraged to think and share ideas, as cognition is the driving force behind a good and informative CLIL.

The activities used during the intervention worked towards motivating the students to communicate subject content in an oral manner and to develop listening and reading skills. All the activities used during the intervention were linked and sequenced to help maintain progress. Collaborative and individual activities were part of the intervention. Also, questioning, primarily open-ended questions, played a significant role during the intervention.

The researcher provided scaffolding during the intervention. As suggested by Vygotsky (1978), what learners do today with help will be able to do the same tomorrow without help. The researcher repeated instructions and guidelines during activities, and even crucial concepts of the lesson were revisited frequently.

The researcher used formative assessment in the form of effective questioning of what has been learned and recapitulation of crucial points, along with constructive oral feedback, throughout the intervention process. Redevelopment of sentences, completion of broken sentences, and encouragement to reach corrected answers were majorly used to help the students.

Reflection and summarisation were used to end each lesson. This was to help the students with their learning consolidation, which would help activate what they have learned to improve their skills.

### **3.12.2 Classroom Observation**

The trainers who acted as classroom observers were both Language and Content Trainers at vocational institutions catering to the service industry in Assam, India. Integration in a CLIL classroom works on the content and language understandings shared with a learner. A CLIL teacher's role is to absorb these understandings and work towards integrating the content and language lessons to help the learners receive the integrated input.

The Observer's Sheet was adapted from the checklist prepared by Mehisto et al., (2008). The checklists had sections on what the CLIL teacher aims to do in class, the

indicators, the section if observed/ not observed or unavailable, and comments (A sample of the checklist is added to the Appendices section).

The number of trainer-observers in each institution varied. Skill Center at Assam Down Town University had three trainer-observers who equally divided their time and participated in the 18 hours of intervention. In Kamrup College of Vocational Training, Pragati Edutech and Jettwings Institute of Aviation and Hospitality, two trainer-observers equally divided their time and participated in the 18 hours of intervention. Skill Center at Don Bosco Institute and North East Skill Centre had one trainer-observer each who gave their complete time and participated in the 18 hours of intervention.

### **3.13 Post-Intervention Stage**

This stage includes devising the post-test, designing the assessment rubric, conducting the post-test, and semi-structured interviews with the students and the trainers.

#### **3.13.1 *Format of the Questionnaire***

The post-intervention questionnaire, which followed a similar format to the pilot study questionnaire, had thirteen closed-ended questions and seven open-ended questions (a sample of the questionnaire has been added to the appendices section).

The closed-ended questions were based on CLIL materials, activities, language learning, content learning, the teaching approach used during the intervention, and the future of CLIL. The open-ended questions tried to get the students' views about the CLIL approach holistically and their gains from the intervention classes. The Likert scale (1932) was used to prepare the questionnaire.

#### **3.13.2 *Administering the Questionnaire***

The questionnaire was administered immediately after the intervention. The researcher read out the questionnaire to help clarify and explain any confusing words or sentences to the students. The researcher wanted each student to answer the questionnaire fully and with complete clarity, using their thoughts and words to express their experience during the intervention.

A total of 45 minutes were given to the students to complete the questionnaire. Furthermore, the researcher and trainer were the invigilators for the entire period.

### ***3.13.3 Devising the Post-Test***

The post-test was devised right after the intervention, on the 10th and 11th day. The post-test was oral, as speaking skills were identified as essential language skills in terms of their course and the future job market. The test had two sections similar to the pre-test; in the first section, the students had to define two critical concepts related to the content area. In the second section, the students had to introduce themselves like they would in an interview.

The first section of the post-test tried to examine the students' use of language at the word, sentence, and paragraph levels to compare their ability before and after the intervention. This section also tried to test the language used by the students to explain their content area.

In the second section, the students were placed in an interview situation wherein they had to introduce themselves. The researcher and course trainer assumed the role of the interviewers.

### ***3.13.4 Designing the Assessment Rubric***

The rubric presented by Brown (2012) and 'Rubrics, Band scales and Boxing weights' as mentioned by Ball et al., (2015) were collectively referred to in order to prepare the research assessment rubric. The rubric is added to the appendices section of the thesis. These bases of assessment analysis helped understand the growth of learners in both the content and language areas.

Interaction, fluency and coherence, pronunciation, grammar and vocabulary and communication comprised the five rubric sections with a scale band of 5 to 1. Using a rubric for assessing the intervention was formative, as it was to test an approach. The criteria for choosing the formative assessment was to help the learners with their self-assessment and encourage peer assessment. "Formative Assessment...is more associated with on-going continuous assessment. It is linked to the notion of 'assessment for learning' in that it is more diagnostic than the others and usually occurs during a course. It also includes within its broader remit practices such as self-assessment, peer assessment, and performance assessment" (Ball et al., 2015, p. 210).

### ***3.13.5 Conducting the Post-Test***

The researcher attempted to record each student during the test, but this was not possible due to the protocols of the institutions, lack of a noise-free locations, and

technical difficulties. Hence, the rubric card the researcher used acted as the sole assessment tool for the learners. In the available constraints, the post-test was successfully conducted with the students' and trainers' active participation and cooperation.

### **3.13.6 *Semi-structured Interviews***

Semi-structured interviews were conducted for all the participants and trainers to gather a more qualitative understanding of the intervention process. The interviewer followed a checklist of themes that helped to frame the questions. The checklist for the students included the following themes- CLIL materials, intervention activities, collaborative learning, speaking skills, content and language learning, their opinion about the CLIL approach and their interest in future CLIL courses. The checklist for the trainers was similar, with just an extra theme – interest in teaching students using the CLIL approach.

Rubin & Rubin (2005) proposed how semi-structured interviews helped in the interview process to broaden and understand the answers of the interviewees. Based on Dornyei's (2007) advice, the researcher was quite flexible with the interviews and allowed the interviews to flow naturally.

### **3.14 Conclusion**

This chapter detailed the study's design, including detailed descriptions of each stage and the processes leading up to each stage. To ensure clarity, reasons were supplied for each stage. The following chapter evaluates and interprets the quantitative and qualitative data gathered.